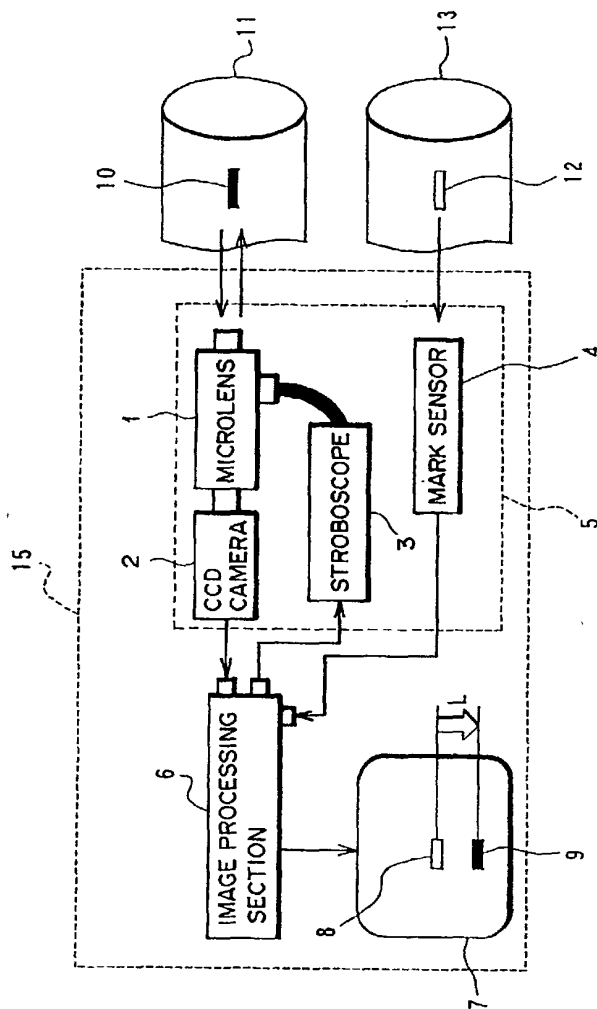


FIG. 1

BLOCK DIAGRAM OF A ROTATIONAL PHASE DIFFERENCE DETECTING SYSTEM
OF A FIRST EMBODIMENT OF THE PRESENT INVENTION



5 : MEASURING SECTION

7 : DISPLAY SECTION

8 : REFERENCE POSITION FOR AN IMAGE PROCESSING MARK

9 : DETECTED POSITION OF AN IMAGE PROCESSING MARK

10 : IMAGE PROCESSING MARK

11, 13 : PRINTING ROLL

12 : REFERENCE MARK

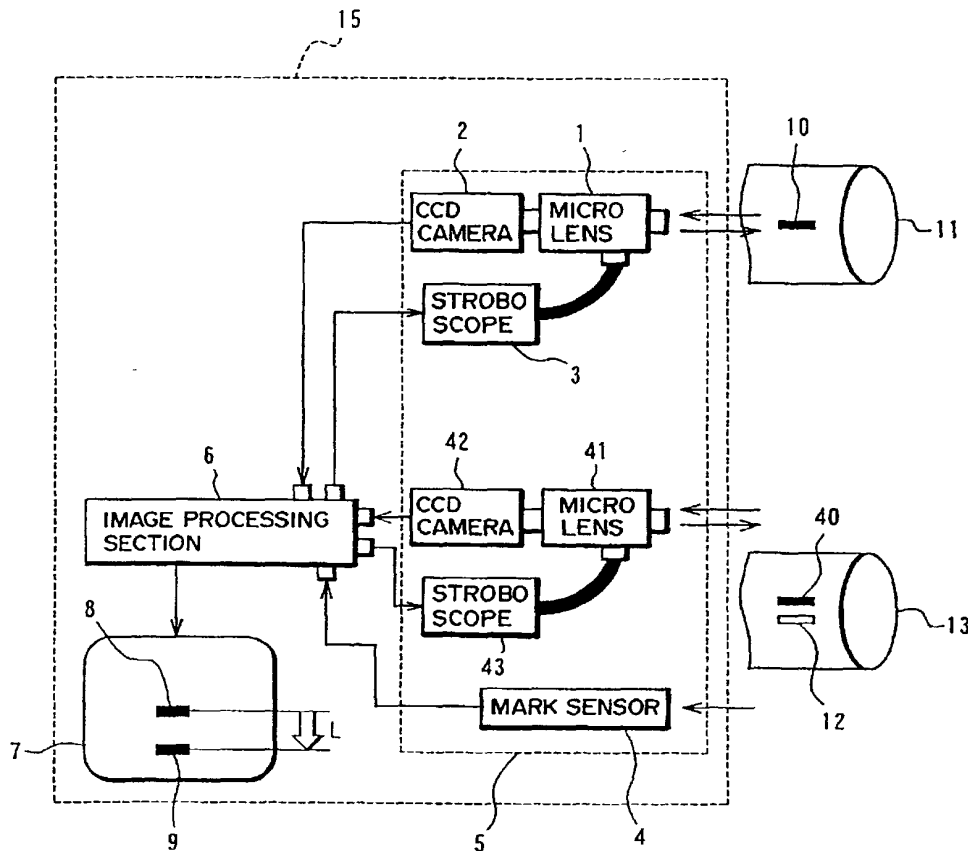
15 : ROTATIONAL PHASE DIFFERENCE DETECTING SYSTEM



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FIG. 2

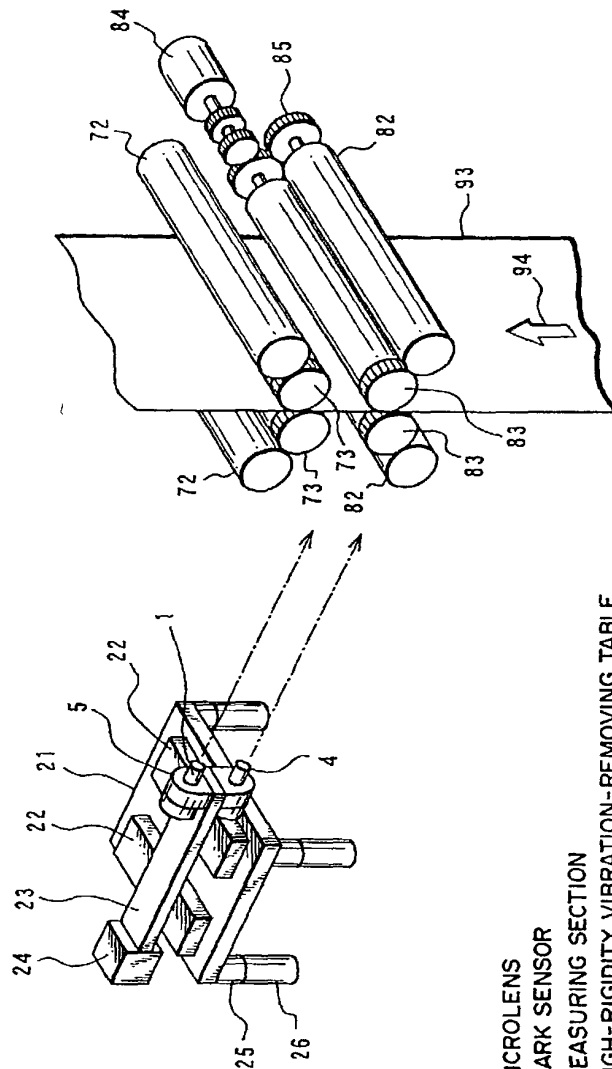
BLOCK DIAGRAM OF A ROTATIONAL PHASE DIFFERENCE DETECTING SYSTEM
 OF A SECOND EMBODIMENT OF THE PRESENT INVENTION



- 5 : MEASURING SECTION
- 7 : DISPLAY SECTION
- 8 : REFERENCE POSITION FOR AN IMAGE PROCESSING MARK
- 9 : DETECTED POSITION OF AN IMAGE PROCESSING MARK
- 10 : IMAGE PROCESSING MARK
- 11, 13 : PRINTING ROLL
- 12 : REFERENCE MARK
- 15 : ROTATIONAL PHASE DIFFERENCE DETECTING SYSTEM
- 40 : IMAGE PROCESSING MARK

FIG. 3

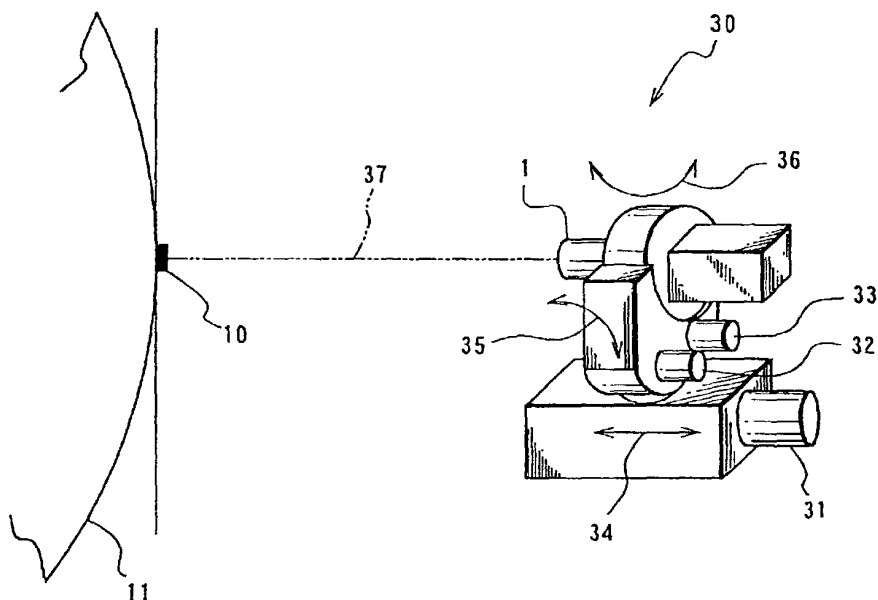
CONSTRUCTION DIAGRAM OF THE MEASURING SECTION IN THE EMBODIMENT OF THE PRESENT INVENTION



- 1 : MICROLENS
- 4 : MARK SENSOR
- 5 : MEASURING SECTION
- 21 : HIGH-RIGIDITY VIBRATION-REMOVING TABLE
- 23 : MOUNTING ARM
- 24 : COUNTER WEIGHT
- 25 : FINE VIBRATION-REMOVING SECTION
- 26 : COLUMN
- 40 : PRINTING MACHINE
- 72, 82 : PLATE CYLINDER ROLL
- 73, 83 : PRINTING ROLL
- 84 : ROLL DRIVE MOTOR
- 85 : DRIVING GEAR

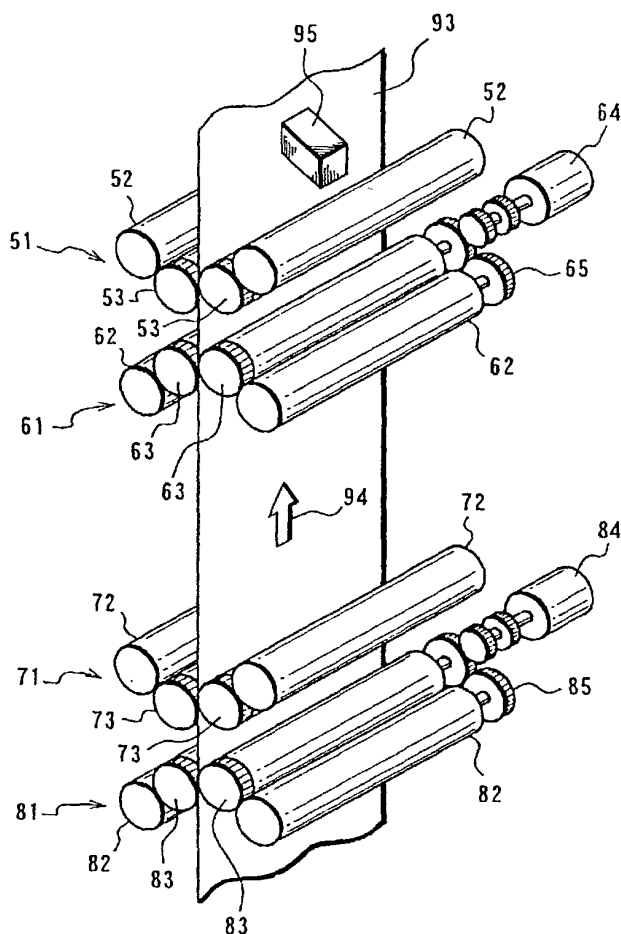
FIG. 4

CONSTRUCTION DIAGRAM OF THE FINE-ADJUSTMENT ACTUATOR
IN THE EMBODIMENT OF THE PRESENT INVENTION



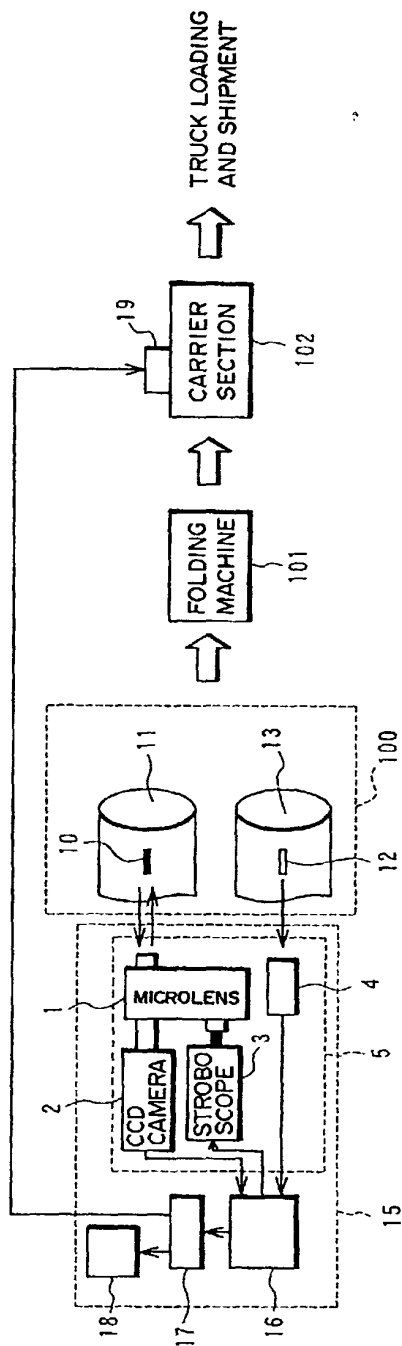
- 1 : MICROLENS
- 10 : IMAGE PROCSSING MARK
- 11 : PRINTING ROLL
- 30 : FINE-ADJUSTMENT ACTUATOR
- 31, 32, 33 : MOTOR
- 37 : OPTICAL AXIS

FIG. 5



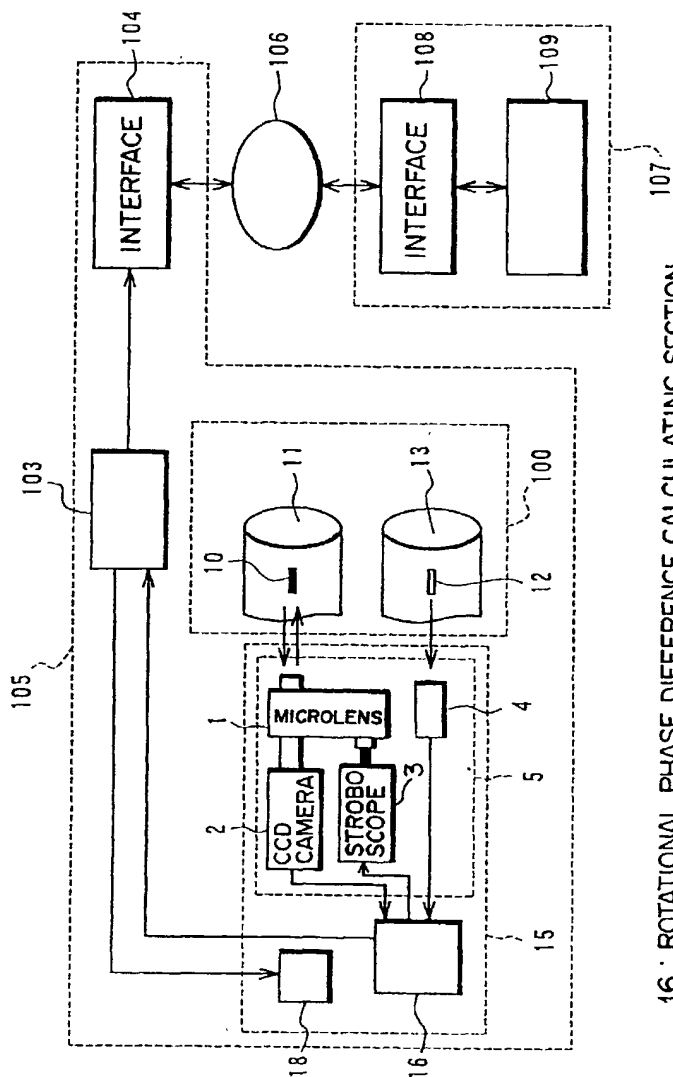
- 51 : BLACK PRINTING SECTION
 61 : YELLOW PRINTING SECTION
 71 : RED PRINTING SECTION
 81 : BLUE PRINTING SECTION
 52, 62, 72, 82 : PLATE CYLINDER ROLL
 53, 63, 73, 83 : PRINTING ROLL
 64, 84 : ROLL DRIVE MOTOR
 65, 85 : DRIVING GEAR
 93 : PRINTING PAPER
 95 : CAMERA

FIG. 6



- 4 : MARK SENSOR
- 5 : MEASURING SECTION
- 10 : IMAGE PROCESSING MARK
- 11,13 : PRINTING ROLL
- 12 : REFERENCE MARK
- 15 : ROTATIONAL PHASE DIFFERENCE DETECTING SYSTEM
- 16 : ROTATIONAL PHASE DIFFERENCE CALCULATING SECTION
- 17 : ROTATIONAL PHASE DIFFERENCE DECIDING SECTION
- 18 : DISPLAY SECTION
- 19 : ALARM DEVICE

FIG. 7

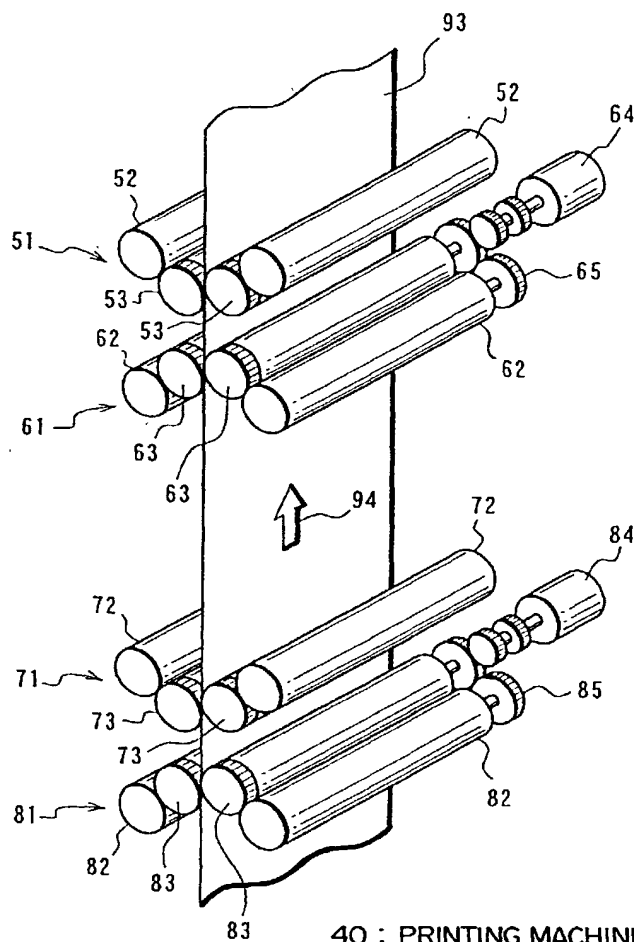


- 16 : ROTATIONAL PHASE DIFFERENCE CALCULATING SECTION
18 : DISPLAY SECTION
103 : M/C OPERATION CONTROL PANEL
105 : FACTORY-SIDE SYSTEM
106 : TRANSFER MEDIUM
107 : REMOT-SIDE SYSTEM
109 : ROTATIONAL PHASE DIFFERENCE DECIDING SECTION



FIG. 8

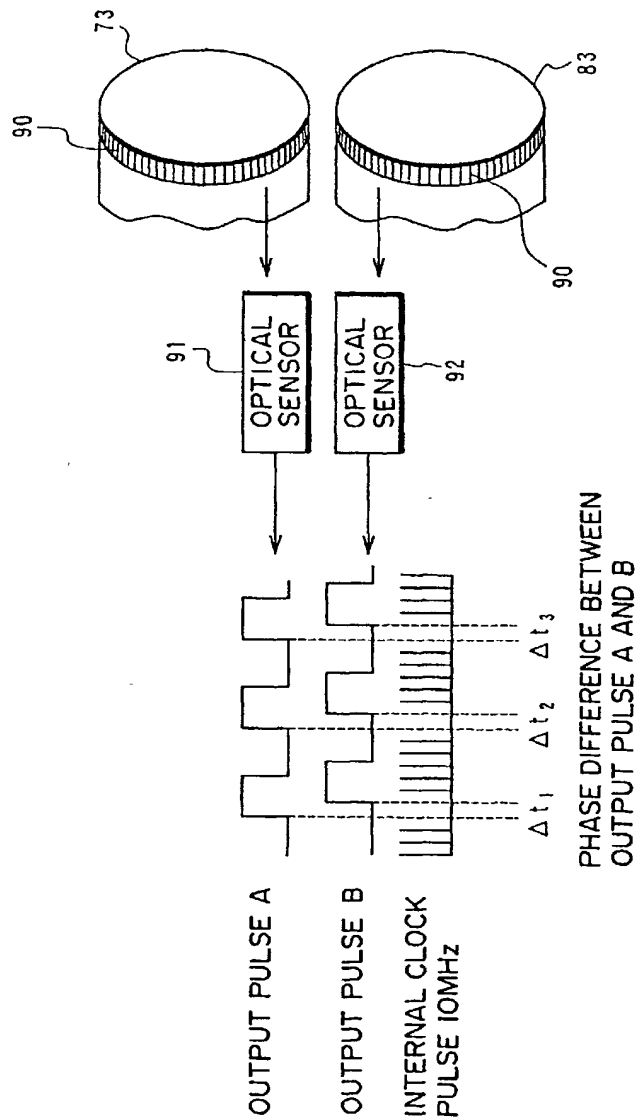
OUTLINE DIAGRAM OF AN OFFSET ROTARY PRINTING MACHINE



- 40 : PRINTING MACHINE
- 51 : BLACK PRINTING SECTION
- 52, 62, 72, 82 : PLATE CYLINDER ROLL
- 53, 63, 73, 83 : PRINTING ROLL
- 61 : YELLOW PRINTING SECTION
- 64, 84 : ROLL DRIVE MOTOR
- 65, 85 : DRIVING GEAR
- 71 : RED PRINTING SECTION
- 81 : BLUE PRINTING SECTION

FIG. 9

EXPLANATORY DIAGRAM OF A CONVENTIONAL
PHASE DIFFERENCE DETECTING METHOD



73, 83 : PRINTING ROLL
90 : BLACK-AND-WHITE PATTERN